



Ministry of Higher Education and
Scientific Research - Iraq
University of Baghdad
College of Engineering
Department of Computer Engineering

MODULE DESCRIPTOR FORM

Module Information				
معلومات المادة الدراسية				
Module Title	COMPUTER NETWORKS 1		Module Delivery	
Module Type	CORE		Theory and lab	
Module Code	COE303			
ECTS Credits	5			
SWL (hr/sem)	125			
Module Level	1	Semester of Delivery	5	
Administering Department	Computer Engineering	College	Engineering	
Module Leader		e-mail		
Module Leader's Acad. Title	Assistant Professor	Module Leader's Qualification	PhD	
Module Tutor	None	e-mail	None	
Peer Reviewer Name		e-mail		
Review Committee Approval		Version Number	1.0	

Relation With Other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	

Co-requisites module	None	Semester
Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية		
Module Aims أهداف المادة الدراسية	1. Explore the application layer protocols and services that enable network applications to communicate over the Internet. This includes topics such as HTTP, DNS, email protocols (SMTP, POP, IMAP), and multimedia streaming. 2. Understand the role of the transport layer in providing reliable and efficient data transfer between end systems. Topics covered include TCP and UDP protocols, congestion control, and flow control.	
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understanding of Network Architecture: Students should be able to explain the layered network architecture, including the functions and interactions of each layer. 2. Knowledge of Network Protocols: Students should have a solid understanding of various network protocols and their purpose, such as HTTP, DNS, TCP, UDP, IP, and Ethernet. 3. Application Layer Skills: Students should be able to analyze and design network applications, understand their protocols, and troubleshoot issues related to application-layer communications. 4. Transport Layer Skills: Students should be able to analyze and evaluate the performance of transport layer protocols, understand congestion control mechanisms, and configure transport layer parameters for different scenarios.	
Indicative Contents المحتويات الإرشادية	1. Introduction to Computer Networks • Overview of computer networks and their importance • Network architecture and the layered approach • Internet history and evolution 2. Application Layer • Introduction to application layer protocols • Web and HTTP protocols • Domain Name System (DNS) • Email protocols (SMTP, POP, IMAP) • Multimedia streaming protocols 3. Transport Layer • Transport layer services and principles	

	- User Datagram Protocol (UDP) - Transmission Control Protocol (TCP) - Congestion control algorithms
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1) Lectures. 2) Tutorials. 3) Homework and Assignments. 4) Tests and Exams. 5) In-Class Questions and Discussions. 6) Extracurricular Activities. 7) Seminars. 8) In- and Out-Class oral conversations. 9) Lab. Experiments

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	5.3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	71	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	4.7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	5% (5)	6, 10	LO #1, 2, 3 and 4
	Assignments	2	5% (5)	2, 12	LO # 1, 3
	Projects / Lab.	15	15% (15)	All	All
	Report	1	5% (5)	13	LO # 3-5
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-5
	Final Exam	3 hr	60% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Computer Networks and the Internet
Week 2	Delay, Loss, and Throughput in Packet-Switched Networks
Week 3	Application Layer: Web and HTTP
Week 4	Application Layer: E- Mail
Week 5	Application Layer: DNS
Week 6	Application Layer: Peer-to-Peer File Distribution, Video Streaming, and Content Distribution Networks
Week 7	Socket Programming
Week 8	Mid-Term Exam
Week 9	Transport Layer Protocols: Introduction and UDP
Week 10	Principles of Reliable Data Transfer Protocol
Week 11	Pipelining Protocols
Week 12	Transport Layer Protocols: TCP
Week 13	Principles of Congestion Control
Week 14	TCP Congestion Control
Week 15	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to the network Lab
Week 2	Building and testing a simple LAN
Week 3	Configuring IP addresses
Week 4	File sharing in LAN
Week 5	Getting Started with Wireshark
Week 6	Network Virtualization
Week 7	Mid Lab.Exam
Week 8	HTTP
Week 9	Email and FTP
Week 10	DNS
Week 11	TCP

Week 12	UDP
Week 13	Socket Programming with UDP
Week 14	Socket Programming with TCP
Week 15	Final Lab. Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Computer-Networking: A-Top-Down-Approach by James F. Kurose & Keith W. Ross-8th-edition	No
Recommended Texts	- Computer Networks 5th edition by Andrew S. Tanenbaum, David J. Wetherall Computer Networks: A Systems Approach, Sixth Edition by Larry Peterson and Bruce Davie - Data Communications and Networking with TCP/IP Protocol Suite, 6th Edition By Behrouz A. Forouzan	No
Websites	https://gaia.cs.umass.edu/kurose_ross/index.php	

APPENDIX:

GRADING SCHEME				
مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A – Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C – Good	جيد	70 - 79	Sound work with notable errors
	D – Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E – Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

